Project Management Institute

A PMI REPORT ON PROJECT MANAGEMENT PRACTICES IN INDIAN OIL AND GAS SECTOR

An Executive Summary

Study conducted by **Nielsen India**

A PMI REPORT ON PROJECT MANAGEMENT PRACTICES IN INDIAN OIL AND GAS SECTOR

Executive summary

Rapid economic growth, urbanization, industrial expansion, electrification, etc. is leading to fast increase in energy demand in India – almost a third of which will be met by the oil and gas (O&G) sector. While this creates a huge US$542 bn investment opportunity over period till 2040, the past experience of average delay of 1.5 years in petroleum sector projects with average cost escalation of 6.2% makes it imperative for the Indian oil and gas sector companies to adopt global best practices in project management. The need is further accentuated by 81% of respondents for this study finding project management practices in the oil and gas (O&G) sector in India to be behind the global standards.

ENERGY DEMAND	OIL & GAS DEMAND
4th Largest energy consumer in the world	32% Projected share of oil and gas in India's energy demand in 2040
440 Mtoe to 1908 Mtoe Energy demand is expected to increase by more than 4 times over 2000-2040	135 Mtoe to 607 Mtoe The expected rise in oil and gas demand over 2000-2040
25% India's share in incremental global energy demand over 2015-2040	45% India's share in projected global net increase in oil demand
US$ 542 bn Investment opportunity in the Indian Oil & Gas sector over 2015-2040	US$ 308 bn in oil sector
	US$ 240 bn in gas sector

Considering the humongous investment requirements and the savings that can be made by improving the project management practices, this study proposes to develop an in-depth understanding of the current project management capabilities of the Indian O&G infrastructure sector (including the PMC/EPCs), assess/identify the gaps in organizational structure, practices, skill sets, etc., and suggest ways to bridge the gaps through better organizational planning and manpower capability building. As part of the study, top management and project managers with minimum 15-20 years of experience across oil and gas companies and associated PMC/EPCs active in the Indian oil and gas sector were interviewed. The respondents cut across public and private companies, Indian and foreign origin companies, upstream and downstream companies, oil and gas producers to PMCS/EPCs.

Data source: India Energy Outlook 2015 by International Energy Association.
Mtoe: Million tonnes of oil equivalent

Reasons for delay in projects – planning stage

REASONS CITED	% OF RESPONDENTS
Lack of detailed planning	73%
PMC/EPC selection	64%
Slow decision making	56%
Lack of flexibility	55%
Poor risk management	50%
Lengthy processes	46%
Project management skill deficiency	40%

Project planning and PMO

- Lack of focus on project details - time scheduling, budgeting, technical specifications, etc., often followed 'norms' based on past projects and not through detailed evaluation of project at hand.
- Sub-optimal detailing in Project Scope Statement (PSS) and limitations in Work Breakdown Structure (WBS).
- Only 57%of responding companies had an active project management division, but primarily focused on project monitoring and control. Some of the other line departments like Finance, Engineering, Planning, HR, etc., along with the Board performed some of the other typical functions of a Project Management Office (PMO).
- Only 22% of respondents claimed to have some form of well integrated PMO in their organization.

Risk management

- Only 25% of surveyed O&G companies had a dedicated independent risk management services vertical.
- Only 28% of the respondents mentioned about organizational practice of drawing detailed response plan for each of the major identified risks.
- All the respondents claimed to follow a mix of quantitative and qualitative risk management techniques. But greater reliance was on qualitative approach.
- 67% of PMC/EPC respondents mentioned that the depth and details of risk identification-assessment-mitigation strategy followed in a project was determined by client requirement.

Organizational aspects

- 85% of respondents found project management practices of public sector units (PSUs) to lag behind their multinational and large private counterparts.
- Government rules and regulations, the 'fear' of vigilance, long drawn bureaucratic process of decision making, etc., were seen to cause frequent delays in PSU projects.
- Time overruns occurred primarily due to delay in PMC/EPC selection (64% of respondents), should this be bureaucracy and lengthy decision making process (46%), lack of flexibility in operational decision making (56%), etc.,

PM skill deficiency

- 76% of respondents referred to project management skill deficiency in the Indian O&G sector.
- Only 20% of senior project management staff available in the job market were considered to be good, rising to 40% for mid-management level positions.
- All respondents claimed to have project management skill training modules for staff. Large corporates used a mix of internal and external training while smaller ones relied mostly on external facilitators.
- 79% of respondents stressed on 'job experience' over 'project management skill training and/or certification'.

Reasons for delay in projects – execution stage

REASONS CITED	% OF RESPONDENTS
Change in scope of work	73%
Project change control inefficiencies	70%
Procurement delays	68%
Slow decision making	60%
Project management skill deficiency	54%
Inefficient project monitoring and control	54%
Manpower allocation issues	46%
Inefficient material management	40%
Coordination issues between O&G and PMC/EPCs	39%
Contract management issues	35%
Technical skill deficiency	33%
Financial issues	27%
Infrastructural factors	23%

Scope creep

- A direct corollary of poor project planning was the reported frequent changes in project scope.
- 3/4th of respondents identified scope creep as a major cause for project delays – highest among all the reasons cited.

Execution

- Project management skill deficiency was cited by more than half the respondents for execution delays.
- Lack of a system of prior verification of suppliers' existing order book vis-à-vis supply capacity, accentuated by tendency of suppliers to overbook orders, were causing frequent procurement delays.
- Limited number of technically qualified vendors for equipment supply further added to the problem.
- Suppliers located far from project location, infrastructural bottlenecks especially in last mile connectivity to remote project locations, etc., were also cited as reasons for procurement delays.
- Material management inefficiencies frequently arose due to duplication of effort caused by decentralized project specific procurement and stock maintenance.
- Stock management system was also not real time, leading alternately to over ordering or shortages.
- Failure to completely specify every relevant aspect of project scope in the contract led to delays arising out of long chains of negotiations, arbitration and/or mitigation, re-contracting, etc.
- Slow and long drawn decision making process and failure to react fast were also cited as reasons for delays in PSU projects.
- Failure to plan and adjust manpower allocation according to project cyclical requirements led to occasional manpower shortages, and consequent project delays.

Monitoring and control

- Project management skill deficiencies also contributed to inefficient project control. 70% of respondents cited lack of project change control skill and preparedness as a cause for time overruns.
- Though structured project monitoring practices was followed, lack of proactive control measures were cited as a reason for delay by 54% of respondents.

Stakeholder coordination

- Lack of coordination and trust was evident among the O&G Co.s versus the PMC/EPCs.
- 52% of respondents from O&G producing companies were dissatisfied with the PMC/EPCs.
  - Failure to adhere to time and cost schedule (64% of respondents) and quality and technical specifications (58%) were the main complaints from the oil and gas producing companies against the PMC/EPCs.
- 56% of respondents from PMC/EPCs in turn were dissatisfied with the O&G Co.s
  - Project scope creep (76% of respondents) was the most frequently cited grouse of the PMC/EPCs against their oil and gas clients.
  - Unrealistic expectations (64%) in terms of project time line, cost, budget, etc., which to an extent arose out of project management skill deficiency (56%), were two other frequent complaints by PMC/EPCs.
  - Fierce competition to secure business was cited by the smaller consultants as reason for participating in such projects despite unrealistic time lines.
  - Lack of openness to engage with PMC/EPCs for their views/feedback to adjust project contours, slow and lengthy decision making process were the major PSU oil and gas company specific complaints.

Cost overruns in projects

REASONS CITED	% OF RESPONDENTS
Lack of detailed planning	81%
Scope creep	77%
Project management skill deficiency	73%
Poor procurement management	64%
Poor contract management	56%
Poor material management	52%
Infrastructural bottlenecks	46%
Poor performance by consultant	29%

Planning

- Project management skill deficiency, lack of detailed planning and resultant frequent cases of scope creep were identified as the top 3 reasons for project cost escalation.

Execution

- Inefficient procurement management–failure to reap economies of scale due to lack of centralized procurement, delayed start and/or slow process, etc., - were cited by almost 2/3rd of respondents as a major reason for project cost inefficiencies.
- Incomplete/faulty project scope specification in contract, leading to mid-project long chains of renegotiations, arbitration and/or mitigation frequently led to time overrun and cost escalation.
- Poor material management– inaccurate planning/estimation, lack of real time stock management system, etc. often led to over-ordering or short notice purchases due to shortages.

External factors induced delay and cost overruns

REASONS CITED	% OF RESPONDENTS
Land procurement delay	80%
R&R delays	70%
Delay in regulatory approval	57%
Local and labor issues	26%
Geological factors	25%

- Inefficiencies in the risk management processes followed is exemplified by the considerable project time overruns caused by external factors such as delay in land procurement, rehabilitation and resettlement, regulatory approvals, etc.
- Time scheduling and/or cost budgeting were reported by a majority of respondents to be based on past projects with limited project specific evaluation at project location.
- Failure in fruitfully engaging the relevant external stakeholders (landowners, local government bodies, political parties, NGOs, regulators, etc.) were cited as the major reasons contributing to the delays in obtaining land and regulatory approvals. Legal complexity, delay in judicial processes, etc., were other contributing factors.

Potential impact of time delay and cost overruns on oil and gas sector investment

US$ 34-37 bn is the estimated cost overrun and additional investment outlay over 2015-40 if the existing project implementation scenario in petroleum sector continues to prevail.

US$542 bn

Investment requirement in Indian O&G sector over the period to 2040

15 months

Average delay in PSU petroleum sector projects worth Rs.100-999 crore

- Rises to 18 months in projects worth Rs 1000 crore plus

6.2%

Average cost overrun across all PSU petroleum sector projects

- Rises to 6.9% in PSU petroleum sector projects worth Rs 1000 crore plus

Way ahead

Project planning	• 85% of respondents suggested increased focus on improving planning process and detailing considering frequent time delays and cost overruns due to sub-optimal planning. • 77% respondents highlighted the need for increased adoption of structured risk identification-assessment-mitigation planning to replace current largely qualitative approach. • Considering that project management inefficiencies can be traced to project management skill deficiencies, 71% of respondents identified manpower planning including effective practical training and external certification as a major focus areas for improvement.
Project execution	• 82% of respondents stressed on limiting scope creep to ensure improved adherence to time schedule and cost budget. • The need to erase trust deficiency and attain better coordination between O&G Co.s and PMC/EPCs for better project execution experience was emphasized by 76% of respondents. • Considering the multi stakeholder project environment with significant inter-dependencies, need to improve project change control skills and processes was another important focus area identified by 73% of respondents.
Organizational reform	• Focus, initiative and involvement of top management in ushering in a holistic structured project management practices was in the wish list of 73% of respondents. • 64% of respondents stressed on adoption of integrated project planning and execution through setting up of a PMO as an ideal way to address the frequent co-ordination failures across multiple verticals. • Enhanced operational autonomy and evolution of a decision making authority, were two PSU specific suggestions by around 2/3rd of respondents for a streamlined faster decision making process.
Focus areas for top management	• 90% of respondents identified adoption of best practices (structured project management, risk identification-assessment-mitigation strategy, setting up PMO, external project management certification, knowledge management) etc., as the immediate area for top management focus. • 77% of respondents stressed on the need to focus on manpower planning and project management skill development considering the long years of experience and training required to hone project management skill. • Impressing upon governments to accord greater operational and procedural autonomy for better streamlined and faster decision making, was highlighted by 85% of respondents as major areas for focus by PSU top management.

PMI India
PMI Organization Centre Private Limited, Mumbai, India
E-mail: pmi.india@pmi.org
Website: www.pmi.org.in | www.pmi.org